

SOV/124-59-1-1013

Translation from: Referativnyy zhurnal. Mekhanika, 1959, Nr 1, p 141 (USSR)

AUTHOR: Galimkhanov, K.G.

TITLE: A New Method for the Determination of Technical Limits of Elasticity and Yield of a Thin Spring-Wire Under Torsion

PERIODICAL: Tr. Ufimsk. aviats. in-ta, 1957, Vol 3, pp 63-73. See: Zavodsk. laboratoriya, 1957, Vol 23, Nr 12, pp 1485-1488

ABSTRACT: The torsion-diagram is approximated to a parabola of the m-order.

Card 1/1

AUTHOR: Galimkhanov, K.G. 32-12-35/71

TITLE: A New Method of Determining the Technical Elasticity- and Stretching-Strain Limits of a Thin Spring Wire Subjected to Torsion (Novaya metodika opredeleniya tekhnicheskikh predelov uprugosti i tekuchesti tonkoy pruzhinoi provoloki pri kruchenii).

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 12, pp. 1485-1488 (USSR)

ABSTRACT: In contrast to the well-known method developed by Zibel-Pomp, which is described as hardly suitable for industrial purposes (because of its alleged complicated character), a new method is recommended. This method relates to the determination of the mechanical characteristics of the material and the structure of torsion diagrams of a spiral spring of 0.5-1.5 mm thickness. A special device is suggested here for this purpose. It consists of a base plate with supporting blocks for clamping in the wire, one of which is used for the torsion of the wire, while the second serves for the elastic fixing of the second end of the wire, where measuring of traction is carried out by special apparatus. At the side of the supporting blocks an optical device is fitted which makes it possible to study the changes taking place on the wire to be investigated. For the construction of

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A New Method of Determining the Technical Elasticity-  
and Stretching-Strain Limits of a Thin Spring Wire  
Subjected to Torsion

32-12-35/71

diagrams a parabolic approximation of the kind  $M = A\gamma^m$  is suggested (where  $M$  denotes the torsional moment, and  $A\gamma^m$  is the angle of twisting of the wire). In this connection it is assumed that the parameter for the diagram is between 0 and 1. On the basis of computations a nomogram of the elasticity limit is here set up, in which the ordinates drawn for each  $M$ -value facilitate reading off the required values. There are 3 figures, and 5 Slavic references.

ASSOCIATION: Ufa Institute for Aviation imeni Ordzhonikidze (Ufimskiy aviationsionnyy institut im. Ordzhonikidze).

AVAILABLE: Library of Congress

Card 2/2      1. Wire-Elasticity determination

"APPROVED FOR RELEASE: 07/16/2001

CIA-RDP86-00513R000614110010-7

GALIMKHANOV, K.G.; KUVSHINOV, Yu.A.; SOKOLOV, N.V.

Semiautomatic device for measuring the leastic limit of wire.  
Izm.tekh. no.8:32-34 Ag '62. (MIRA 16:4)  
(Elastic rods and wires--Measurement)

APPROVED FOR RELEASE: 07/16/2001

CIA-RDP86-00513R000614110010-7"

GALIMKHANOV, K.G.; KUVSHINOV, Yu.A.; SOKOLOV, N.V.

Methods and equipment for the determination of the technical  
elasticity limit of thin spring wire under the effect of torsion.  
Sbor. trud. TSNIICHM no.32:205-208 '63. (MIRA 16:12)

GALIMON, L.S., kand. ekon. nauk; IOFFE-GONCHARUK, N.A.; KOTSAREVA, T.G.; SOZINOVA, O.A.; STEKLOVA, A.N.; KHURGINA, Z.A.; KOTKOV, M.I., otv. red.; NADEZHDINA, A., red. izd-va; TELEGINA, T., tekhn. red.

[Control over wage fund disbursement] Kontrol' za raskhodovaniem fondov zarabotnoi platy. Moskva, Gosfinizdat, 1962. 117 p.

(MIRA 15:7)

1. Gosudarstvennyy bank Moskvy (for Ioffe-Goncharuk, Kotsareva, Sozinova, Steklova, Khurgina). 2. Nachal'nik Otdela kontrolya za zarabotnoy platoy Pravleniya Gosudarstvennogo banka SSSR (for Kotkov).

(Moscow—Banks and banking) (Moscow—Wages)

GALIMON, N.

Book on a film. Znan.sila 30 no.12:11-12 D '55. (MLRA 9:4)  
(Micraphotography)

GALIMOV, A., inzh. p ratsionalizatsii

Stand for testing sling ropes. Neftianik 7 no.6:12 Je '62.  
(MIRA 15:8)  
(Ishimbay region--Oil fields--Equipment and supplies)

BARINOV, G.; GALIMOV, A.

Practices in receiving and processing peas at the Chistopol' Flour and Groat Combine. Muk.-elev. prom. 29 no. 4:11 Ap '65.  
(MIRA 16:7)

1. Zamestitel' direktora po kachestvu Chistopol'skogo mel'kru-pokombinata (for Barinov).  
(Chistopol'—Peas—Storage)

AUTHOR: Galimov, A.G., Engineer

SOV/91-58-12-6/20

TITLE: Signalization of the Coal Flow Stop (Signalizatsiya obryva  
uglya)

PERIODICAL: Energetik, 1958, Nr 12, pp 14-15 (USSR)

ABSTRACT: To detect stoppages in the coal flow at shaft-type coal mills using scraper feeders, Semenov, a boiler mechanic at the thermoelectric power plant of Kurgan, developed a simple and efficient signalization system. The system is described and illustrated. The principle on which it works is: as soon as the coal conveyer is emptied of coal, a certain weight is automatically dropped, and signal contacts are switched in. The switch-off used in the system is of PK-22 and intermediary relay of TI EP-101 A type. There is 1 diagram.

Card 1/1

SHAKIROV, R.Kh.; GALLIMOV, A.G.

Experience of the oil well Administration of the Ishimbay Petroleum Trust in the recovery of casing from wells and trenches. Nefteprom. delo no.6:19-21 '65.

1. Neftepromyslovoye upravleniye "Ishimbayneft".

(MIRA 18:10)

DAKHNOV, V.N.; GALIMOV, E.M.

Karst type pores in producing carbonate sediments. Geol. nefti i gaza  
4 no.2:28-31 F '60.  
(MIRA 13:10)

1. Moskovskiy, institut neftekhimicheskoy i gazovoy promyshlennosti  
im.akad.Gubkina.

(Porosity)

GALIMOV, E.M.; GRINENKO, V.A.

Effect of the processes of surface leaching on the isotopic composition of carbon in secondary calcite. Geokhimiia no.1: 115-117 Ja '65. (MIRA 18:4)

1. Institut geokhimii i analiticheskoy khimii imeni Vernadskogo AN SSSR, Moskva i Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti imeni Gubkina.

GALIMOV, E.M.; GRINENKO, V.A.

Age effect in the isotope composition of carbon in the stalactite an-nuations of the Crimean Mountains. Geokhimiia no.6:661-667 Je '65.

(MIRA 18:7)

1. Gubkin Institute of Chemical Oil and Gas Industry and Vernadsky Institute of Geochemistry and Analytical Chemistry Academy of Sciences, U.S.S.R., Moscow.

TAYCHINOV, S.N., prof.; VANYUKOV, Ya.I.; GALIMOV, G.E.; KURCHINOV, P.A.; CHMELEV, M.P.; GARIFULLIN, F.Sh.; BURANGULOVA, M.N.; MOSEYEEVA, Z.V.; SHAROVA, A.S.; CHMELEV, M.P.; MAZILKIN, I.A.; GIZZATULLIN, S.G.; DOBROV, A.V.; KUZNETSOV, F.V.; FILATOV, L.P., red.; KOHYAKOV, I.A., tekhn.red.

[Soils of the Mashita Gafuri Collective Farm and their efficient utilization] Pochvy kolkhoza imeni Mashita Gafuri i puti ikh rassional'nogo ispol'zovaniya. Pod red. S.N.Taichinova. Ufa, 1960. 124 p. (MIRA 14:1)

l. Akademiya nauk SSSR. Bashkirskiy filial, Ufa. Institut biologii.  
(Bashkiria--Soils)

GALIMOV, G.F.

Effect of soil moisture on the increment of woody plants in the  
southeastern trans-Ural region. Mat. po izuch. pochy Bash. ASSR  
no.1:146-158 '60. (MIRA 14:3)  
(Siberia, Western--Trees)(Siberia, Western--Soil moisture)

BURANGULOVA, M.N.; GALIMOV, G.F.; STARIKOVA, Ye.I.

Types of phosphorus in soils of the Sim Agricultural zone of  
Bashkiria. Mat. po izuch. pochv Bash. ASSR no.1:62-76 '60.

(MIRA 14:3)

(Soils--Phosphorus content)

GALIMOV, E.M.; GRINENKO, V.A.; USTINOV, V.I.

Problem of instrumental errors in the precision determination  
of the isotopic composition of elements. Zhur.anal.khim. 20  
no.5:547-553 '65.  
(MIRA 18:12)

1. Moskovskiy institut nafttekhnicheskoy i gazonoy promyshlen-  
nosti imeni I.M.Gubkina i Institut geokhimii i analiticheskoy  
khimii imeni V.I.Vernadskogo AN SSSR, Moskva. Submitted April  
8, 1964.

USTENOV, V.I.; GALIMOV, E.M.; GRINENKO, V.A.

Method of two standards for eliminating systematic errors  
in the measurement of isotope composition by a mass spectro-  
meter. Zhur. anal. khim. 20 no. 11:1180-1184 '65  
(MIRA 19:1)

1. Institut geokhimii i analiticheskoy khimii imeni V.I. Ver-  
nadskogo AN SSSR i Moskovskiy institut neftekhimicheskoy i  
gazovoy promyshlennosti imeni I.M. Gubkina. Submitted Sep-  
tember 9, 1964.

GALIMOV, I. Kh.

Cand Med Sci - (diss) "Bromine content in blood of neurologically sick persons and its dynamics in intense X-ray therapy." Kazan', 1961. 17 pp; (Kazan' State Medical Inst, First Chair of Roentgenology and Radiology and Chair of Nerve Disorders of the Kazan' State Inst for Advanced Training of Physicians imeni V. I. Lenin); 220 copies; price not given; (KL, 5-61 sup, 202)

"APPROVED FOR RELEASE: 07/16/2001

CIA-RDP86-00513R000614110010-7

FAYZULLIN, M.Kh.; GALIMOV, I.Kh.

Conference of readers "Vestnik rentgenologii i radiologii,"  
held in Kazan'. Vest.rent.i rad. 36 no.3:74 My-Je '61.

(MIRA 14:7)

(RADIOLOGY, MEDICAL--PERIODICALS)

APPROVED FOR RELEASE: 07/16/2001

CIA-RDP86-00513R000614110010-7"

FAYZULLIN, M.Kh., prof.; GALIMOV, I.Kh. (Kazan')

Bromine content of the blood during roentgenotherapy for adenomas of the pituitary and diencephalic syndromes. Klin.med. 39 no.4:128-131 '61. (MIRA 14:4)

1. Iz nervnoy kafedry rentgenologii i radiologii (zav. - prof. M.Kh. Fayzullin) Kazanskogo instituta usovershenstvovaniya vrachey imeni V.I. Lenina.

(PITUITARY BODY—TUMORS) (DIENCEPHALON—DISEASES)  
(BROMINE IN THE BODY)

RUSETSKIY, I.I.; GALIMOV, I.Kh.

Disorders of bromine metabolism in diseases of the hypothalamic-hypophysial system. Zhur. nevr. i psikh. 61 no.12:1789-1792 '61. (MIRA 15:7)

1. Kafedra nervnykh bolezney (zav. - prof. I.I. Rusetskiy) i pervaya kafedra rentgenologii i radiologii (zav. - prof. M.Kh. Fayzullin) Kazanskogo gosudarstvennogo instituta dlya usovershenstvovaniya vrachey imeni Lenina.

(BROMINE) (HYPOTHALAMUS--DISEASES)  
(PITUITARY BODY--DISEASES)

RAKHLIN, L.M., prof.; SOKOLOV, N.V., prof.; MONASYPOVA, M.V.;  
FAYZULLIN, M.Kh., prof.; GALIMOV, I.Kh.

In the scientific medical societies of the Tatar A. S. S. R.  
Kaz. med. zhur. no.2:94-96 Mr-Ap '62. (MIRA 15:6)  
(TATAR A. S. S. R.—MEDICAL SOCIETIES)

FAYZULLIN, M.Kh., prof. (Kazan<sup>?</sup>); KNIRIK, G.S., kand.med.nauk (Kazan<sup>?</sup>);  
GALIMOV, I.Kh., kand.med.nauk (Kazan<sup>?</sup>).

All-Union Conference of Neurosurgeons. Kaz.med. zhur. 4:  
88-89 Jl.-Ag'63 (MIRA 1782)

GALIMOV, K.G.

Device to control an engine cooling system. Mash.i naft. otor.  
no.12:21-22 '63. (MIRA 17:4)

1. Ishimbayskiy neftepererabatyvayushchiy zavod.

GALIMOV, K.G.

Device for the automatic switching off of an IT9-3 plant when  
the electric energy and water for cooling have been shut off.  
Mash. i neft. obor. no.2:36-37 '64. (MIRA 17:8)

1. Ishimbayskiy neftepererabatyvayushchiy zavod.

1-51412-65 EWT(m)/EFF(c)/P Pr-4 WE  
ACCESSION Nr: AP5015460 UR/0318/64/COO/001/0015/0016

AUTHOR: Galimov, N. G.

TITLE: Mixture method for octane number determination //

SOURCE: Neftepererabotka neftokhimaya, no. 8, 1964, 15-16

TOPIC TAGS: octane

Abstract: The usual determination of octane numbers within the 70-100 range using the 11-9 apparatus proves to be quite costly due to the required burning of the standard isoctane. To reduce the cost of the above 70 octane number determination, the personnel of the Ishimbay Refinery laboratory developed a method by which the sample fuel is mixed with white spirit standard in such a manner that the octane number of the mixture does not exceed 70. The article describes the method and presents the pertinent equations and diagrams. Orig. art. has 2 graphs.

ASSOCIATION: Ishimbayskiy neftepererebatvyayushchiy zavod(Ishimbay Refinery)

SUBMITTED: OO

ENCL: OO

SUB CODE: FP //

NO REF Sov: 000

OTHER: 000

JMS

Card 1A 1/1

GALIMOV, K. Z.

33892. Uravnyeniya Ravnovyesiya Tyeorii I Uprugosti, Pri, Konyechnikh Pyeryemyesh-chyenyiyakh I Dyeformatsiyakh . Uchyen. Zapiski, Kasansk. Gos. U-ta Im. Lyenina, T CIX, KN.1, 1949, C. 15-34.

SO: Letopis' Zhurnal'nykh Statey, Vol. 46, Moskva, 1949.

GALIMOV, K. Z.

33891. K Tyeorii, Konyechnykh Eyeformatsiy. Uchyen. Zapiski Kazansk. Gos. Un-ta  
Im. Lyenina, T. CIX, KN.1, 1949, C. 35-71. — Bibliogr: 8 Nazv.

SO: Letopis' Zhurnal'nykh Statey, Vol. 46, Moskva, 1949.

GALIMOV, K. Z.

USSR/Physics - Shells and Plates, Elastic Nov/Dec 51

"General Theory of Plates and Shells for the Case of Finite Displacements and Deformations (Strains)," K. Z. Galimov, Kazan'

"Priklad Matemat i Mekh" Vol XV, No 6, pp 723-742

Derives the relations of elasticity for isotropic shells. Shows that Galerkin's eqs in the theory of finite deformation of shells are not immediately connected with the principle of min potential energy as in the linear theory. Introduces a functional R which possesses a stationary soln in the case where the static boundary conditions and eqs of equill are

198798

USSR/Physics - Shells and Plates, Elastic Nov/Dec 51  
(Contd)

fulfilled. Transforms functional R into a form not contg any displacement. Gives short exposition of the nonlinear theory of shells in terms of asym tensors. Submitted 13 Jul 51.

198798

"APPROVED FOR RELEASE: 07/16/2001

CIA-RDP86-00513R000614110010-7

and Eulerian systems of coordinates. M. J. Ansoff.

Sources: Mathematical Reviews,

Vol. 13 No. 9

APPROVED FOR RELEASE: 07/16/2001

CIA-RDP86-00513R000614110010-7"

*Gallimov, K. Z.*

Gallimov, K. Z. On certain problems of the theory of shells  
with arbitrary displacements. Izv. Kazan. Filial Akad.  
Nauk SSSR. Ser. Fiz.-Mat. Tehn. Nauk 3, 3-17 (1953). *MS.*  
(Russian)

The work is based on two papers by H. M. Mustari  
[(1) same Izv. 2, 39-52 (1950); MR 14, 1035; and (2) Trudy  
Kazan. Fiz.-Tehnol. Inst. no. 13 (1948) (not available)].  
For the classification of problems for a state of initial stress  
the author refers the reader to (1). Setting out from results  
established in (2) he then proceeds to formulate the equations  
of equilibrium and the boundary conditions, with  
certain approximations, referred to Gaussian coordinates for  
the undeformed state, and also referred to lines of curvature.  
No problems are solved. *L. M. Milne-Thomson.*

1 - F/N

*gol*  
*app*

GALIMOV, K.Z.

Variational principles in the nonlinear elasticity theory. Uch. zap.  
Kaz. un. 113 no.10:155-160 '53. (MIRA 10:6)

1. Kazanskiy gosudarstvennyy universitet im. V.I. Ul'yanova-Lenina.  
(Elasticity) (Calculus of Variations)

GALIMOV, K.Z.

Conditions of continuity of surface deformation in case of  
arbitrary deflections and deformations. Uch. zap. Kaz. un.  
113 no.10:161-164 '53. (MIRA 10:6)

1. Kafedra mekhaniki.  
(Plastic plates and shells)

"APPROVED FOR RELEASE: 07/16/2001

CIA-RDP86-00513R000614110010-7

GALIMOV, K.Z. (Kazan')

Some problems of the nonlinear elasticity theory. Uch.zap.Kaz.un.  
115 no.10:29-31 '55. (MLRA 10:5)  
(Elastic plates and shells)

APPROVED FOR RELEASE: 07/16/2001

CIA-RDP86-00513R000614110010-7"

124-57-1-830

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 1, p 109 (USSR)

AUTHOR: Galimov, K.Z.

TITLE: On Some Variational Formulas of the Nonlinear Theory of Elasticity (O nekotorykh variatsionnykh formulakh nelineynoy teorii uprugosti)

PERIODICAL: Uch. zap. Kazansk. gos. un-ta. 1955, Vol 115, Nr 12,  
pp 111-118

ABSTRACT: Let  $\underline{X}$  be the vector of the volumetric forces and  $\underline{X}_{(n)}$  the vector of the surface forces, referred to the initial unit volume  $v$  and unit surface  $s$ , respectively,  $\underline{u}$  the displacement vector,  $\sigma^{ij}$  the contravariant components of the stress tensor related to an initial unit area in the system of coordinates of the deformed volume,  $\epsilon_{\alpha\beta}$  the finite-deformation tensor,  $W$  the deformation energy,  $F = F(\sigma^{ij})$  the complementary energy

$$F = \sigma^{\alpha\beta} \epsilon_{\alpha\beta} - W; (\sigma^{\alpha\beta} = \partial W / \partial \epsilon_{\alpha\beta}).$$

Card 1/3

124-57-1-830

## On Some Variational Formulas of the Nonlinear Theory of Elasticity

It is demonstrated that if the variations of the stress tensor and the external forces do not infringe on the condition of equilibrium and the static boundary conditions, then the equation

$$\int_v \underline{u} \cdot \delta X \, dv + \int_s \underline{u} \cdot \delta \underline{X}_{(n)} \, ds = \delta \int_v (F + 1/2 \sigma^{\alpha\beta} \nabla_\alpha \underline{u} \cdot \nabla_\beta \underline{u}) \, dv$$

(where the displacement is subject to variation) is the variational formulation of the condition of continuity of finite deformations. An expression of the stress tensor  $\sigma^{ij}$  is given which satisfies the condition of equilibrium in the absence of volumetric forces. The special case of small deformations and moderate angles of rotation is examined. A generalization of Reissner's variational formula (Reissner, E.J., J.Math. & Phys., 1950, Vol 29, Nr 2) is adduced for the functional

$$P = \int_n \underline{X} \cdot \underline{u} \, dv + \int_s \underline{X}_{(n)} \underline{u} \, ds - \int_v (\sigma^{\alpha\beta} \epsilon_{\alpha\beta} - F) \, dv$$

Card 2/3

124-57-1-830

On Some Variational Formulas of the Nonlinear Theory of Elasticity

where possible displacements and arbitrary values of the tensor  $\sigma^{ij}$  are admitted, for comparison,  $\epsilon_{ij} = \epsilon_{ij}(u_k)$ ,  $F = F(\sigma^{ij})$ , and the equations of equilibrium together with the static boundary conditions and the physical relationships  $\epsilon_{ij} = \partial F / \partial \sigma^{ij}$ , constitute the conditions of the stationary state.

N.A. Alumyaç

1. Elasticity--Theory    2. Elasticity--Mathematical analysis

Card 3/3

GALLIMOV, K.Z.

Variational solution methods of problems in the nonlinear  
theory of plates and shells. Uch.sap.Kaz.un. 116 no.1:36-40  
'55. (MLRA 10:5)

1.Kafedra teoreticheskoy mekhaniki.  
(Calculus of variations)  
(Elastic plates and shells)

(4) 3 L 7001, 12 22

Call Nr: AF 1108825  
Transactions of the Third All-union Mathematical Congress (Cont.) Moscow,  
Jun-Jul '56, Trudy '56, V. 1, Sect. Rpts., Izdatel'stvo AN SSSR, Moscow, 1956, 237 pp.  
Vorovich, I. I. (Rostov-na-Donu). Some Problems in the  
Non-linear Theory of Shells Theory. 201-202

Mention is made of Galerkin and Ostrogradskiy.

Galimov, K. Z. (Kazan'). Method of Additional Work  
in Non-linear Theory of Shells. 202

Godunov, S. K. (Moscow). On the Uniqueness Solution of  
Hydrodynamic Equations. 202

Grigor'yev, A. S. (Moscow). Equilibrium of Momentless  
Cylindric Shells for Large Deformations Beyond the  
Elastic Limit. 202-203

Danilov, V. L. (Kazan'). Integral Differential Equation of  
Motion of Water and Petroleum Contact in Porous Medium. 203

Card 66/80

GALIMOV, K.Z.

Variational methods of solving problems of the nonlinear theory of  
plates and shells. Izv.Kazan.fil.AN SSSR.Ser.fiz.-mat. i tekhn.  
nauk no.10:3-26 '56. (MLRA 10:8)

1.Fiziko-tehnicheskiy institut Kazanskogo filiala AN SSSR.  
(Elastic plates and shells)  
(Calculus of variations)

GALIMOV, X.Z.

Theory of bending of thin shells in case of minor deformations  
and great displacements. Uch.zap.Kaz.un. 116 no.5:13-18 '56.  
(MLRA 10:4)

1.Kafedra teoreticheskoy mekhaniki.  
(Elastic plates and shells)

SOV/124-57-3-3403

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 3, p 110 (USSR)

AUTHOR: Galimov, K. Z.

TITLE: On Variational Methods in the Solution of Problems of the Theory of Plates and Shells (K variatsionnym metodam resheniya zadach nelineynoy teorii plastin i obolochek)

PERIODICAL: Uch. zap. Kazansk. un-ta, 1956, Vol 116 (sic!), Nr 1, pp 36-40

ABSTRACT: The paper adduces a variational formula of the state of equilibrium of an elastic shell relative to finite deformations in which formula nine functional arguments are included, namely, the components of the displacement vector  $v_i$  and  $v$  and of the symmetrical tensors of the shearing stresses  $S_{ij}$  and the moments  $M_{ij}$ . It is assumed that the components of the vector of the external forces  $X_j$  and  $X$  admit a potential  $f$  such that

$$X^j = \partial f / \partial v_j, \quad X^j(\text{sic!}) = \partial f / \partial v.$$

Card 1/2 Three equilibrium equations and six relationships between the strain tensors  $p_{ij}$  and  $q_{ij}$  on the one hand (expressed in the

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On Variational Methods in the Solution of Problems of the Theory of Plates (cont.)

variational formula by means of  $v_i$  and  $v$ ) and the tensors  $S^{ij}$  and  $M_{ij}$  on the other hand constitute the steady-state conditions. The latter relationships are formally consistent with the relationships of the theory of elasticity. The variations of the functional arguments are free at the contour. The boundary conditions for the stress function are formulated for the particular case of a shallow shell.

N. A. Alumyaev

Card 2/2

SOV/124-57-8-9301

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 8, p 105 (USSR)

AUTHOR: Galimov, K. Z.

TITLE: On One Method of the Solution of Boundary Problems in Nonlinear Equations of the Theory of Shallow Shells (Ob odnom metode resheniya krayevykh zadach nelineynykh uravneniy teorii pologikh obolochek)

PERIODICAL: Uch. zap. Kazansk. un-ta, 1956, Vol 116, Nr 5, pp.19-26

ABSTRACT: For the purpose of integrating the equations of the theory of shallow shells

$$\nabla_{\alpha} \nabla_{\beta} M^{\alpha\beta} + c^{\alpha\gamma} c^{\alpha\rho} (b_{\alpha\beta} + x_{\alpha\beta}) \nabla_{\gamma} \nabla_{\rho} \psi = p \quad (1)$$

$$B' \Delta \Delta \psi - c^{\alpha\gamma} c^{\beta\rho} (b_{\alpha\beta} + 1/2 x_{\alpha\beta}) x_{\gamma\rho} = 0 \quad (2)$$

$$c^{\alpha j} c^{\gamma\rho} \nabla_{\rho} x_{\alpha\gamma} = 0 \quad (3)$$

$$x_{ij} = D' (a_{ia} a_{j\beta} - \nu c_{ia} c_{j\beta}) M^{\alpha\beta}, \quad (4)$$

where  $B' = 1/Et$  and  $D' = B' / t^2$ ,

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On One Method of the Solution of Boundary Problems in Nonlinear Equations (cont.)

the tensor of moments  $M^{ij}$  is given in the form of

$$M^{ij} = (a^{ia} a^{j\beta} + \nu c^{ia} c^{j\beta}) \nabla_a \nabla_\beta \phi \quad (5)$$

where  $\phi = \sum_{m,n} c_{mn} \phi_{mn}$

and the coordinate functions  $\phi_{mn}$  are expressed in such a way as to satisfy the non-tangential boundary conditions. Expression (5) ensures the fulfillment of the conditions (3) with the precision inherent to the theory of shallow shells. The function  $\psi$  is determined from (2) with the tangential boundary conditions being accounted for by means of  $\phi$ . Equation (1) can be satisfied on the assumption that

$$M^{ij} = 1/2 c^{ia} c^{i\beta} (\nabla_a \psi_\beta + \nabla_\beta \psi_a) - c^{ia} c^{i\beta} (b_{a\beta} + x_{a\beta}) \psi + M^{ij}_{(0)} \quad (6)$$

where  $x_{ij}$  are given by the expressions (4) and (5), while  $M^{ij}_{(0)}$  is a particular solution of nonhomogeneous equation (1). Upon expressing the moment functions  $\psi_i$  in the form of

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SOV/124-57-8-9301

On One Method of the Solution of Boundary Problems in Nonlinear Equations (cont.)

$$\psi_j = \sum_{m,n} A_{mn}^{(j)} \psi_{mn}^{(j)} \quad (j=1, 2)$$

where the coordinate functions  $\psi_{mn}^{(j)}$  must ensure the fulfillment of the nontangential boundary conditions, the author suggests the elimination of the coefficients  $A_{mn}^{(i)}$  with the help of equation (6). A sufficient number of equations is obtained, for example, by the method of Bubnov (see Bubnov, I. G.: Otzyv o rabote prof. S. P. Timoshenko: Ob ustoychivosti uprugikh sistem. Sb. in-ta putey soobshcheniya, 1913, Nr 31; Izbrannyye trudy, Sudpromgiz, 1956, pp 136-139). The third equation, (6), which has not been used up to this point, serves for the determination of  $c_{ij}$ . The author adduces expanded equations for the design calculation of a cylindrical panel subjected to the effect of an external pressure with 1) the panel rigidly restrained, 2) the edge freely supported, as well as under the effect of uniform compression-tension and an external pressure, when the stress values normal to the periphery are given, while the tangential stresses are made equal to zero.

N. A. Alumyaev

Card 3/3

SOV/124-58-7-7894 D

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 7, p 85 (USSR)

AUTHOR: Galimov, K.Z.

TITLE: Some Aspects of the Nonlinear Theory of Shells (Nekotoryye voprosy nelineynoy teorii obolochek)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of Doctor of Physical & Mathematical Sciences, presented to the In-t mekhan. AN SSSR (Institute of Mechanics, Academy of Sciences, USSR), Moscow, 1957

ASSOCIATION: In-t mekhan. AN SSSR (Institute of Mechanics, Academy of Sciences, USSR), Moscow

1. Elastic shells--Theory

Card 1/1

G. I. m. 8. 2

PHASE I BOOK EXPLOITATION

367

Mushtari, Kh. M., and Galimov, K. Z.

Nelineynaya teoriya uprugikh obolochek (The Nonlinear Theory of Elastic Shells)  
Kazan, Tatkigoizdat, 1957. 430 p. 1,000 copies printed.

Sponsoring Agency: Akademiya nauk SSR. Kazanskiy filial.

Resp. Eds.: Mushtari, Kh. M., Doctor of Physical and Mathematical Sciences,  
and Surkin, R. G., Candidate of Technical Sciences; Ed.:  
Vozdvizhenskaya, M. Kh.; Tech. Eds.: Nedel'ko, G. N. and Salikhova, A. S..

PURPOSE: The book is intended for scientific workers, graduate students and  
engineers working on the design of thin-walled structures. It may  
be used as a textbook for students of advanced university courses  
specializing in the theory of elasticity.

COVERAGE: The book deals with the general theory of elastic shells with large  
displacements and small deformations and with its application in  
the investigation of the stability and large deflections of the

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The Nonlinear Theory of (Cont.)

< 367 >

elements of thin-walled structures. There are 198 book references, 128 of which are Soviet, 50 English, 20 German. The introduction mentions some Soviet personalities in connection with their publications in the theory of elasticity. They include: Vlasov, V. Z.; Goldenveyzer, A. L.; Lurye, A. I.; Lyav, A.; Novozhilov, V. V.; Il'yushin, A. A.; Bubnov, I. G.; and Papkovich, P. F. The authors of this monograph thank their coworkers of the Mechanics Section of the Kazan' Branch of the Academy of Sciences, USSR for their help in the accumulation of material and in the preparation of the manuscript. They include: Kornishyn, M. S; Sachenkov, A. V.; Surkin, R. G., Isahbayeva, F. S., Krivosheyev, N. I.; Ganiyev, N. S. It is mentioned that paragraphs 1, 14-23, 25-26, 35-62 were written by Ch. M. Mushtari, paragraphs 2-13, 24, 63-65 by K. Z. Galimov and 27-34 by I. V. Svirskiy.

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AVAILABLE: Library of Congress (QA925-M96)

LK/gmp

June 26, 1958

Card 10/10

GALIMOV, K.Z.

Variational equations of the nonlinear theory of shallow shells.  
Uch. zap. Kaz. un. 117 no.9:65-70 '57. (MIRA 13:1)

1.Kazanskiy gosudarstvennyy universitet im. V.I. Ul'yanova-Lenina.  
Kafedra teoreticheskoy mekhaniki.  
(Elastic plates and shells)

AUTHOR: Galimov, K.Z. (Kazan') SOV/140-58-1-1/21

TITLE: The Application of the Variational Principle for Possible Variations of the State of Stress to the Non-Linear Theory of Flat Shells (Primeneniye variatsionnogo printsipa vozmozhnykh izmeneniy napryazhennogo sostoyaniya k nelineynoy teorii pologikh obolochek)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy Ministerstva vysshego obrazovaniya SSSR, Matematika, 1958, Nr 1, pp 3-11 (USSR)

ABSTRACT: In the paper consisting of five paragraphs the author describes the application of the variational principle to the solution of non-linear physical problems. There is 1 Soviet reference.

ASSOCIATION: Kazanskiy gosudarstvennyy universitet imeni V.I.Ul'yanova-Lenina (Kazan' State University imeni V.I. Ul'yanov-Lenin)

SUBMITTED: October 12, 1957

Card 1/1

Galaxy, L.

16(1);10(2)

PHASE I BOOK EXPLOITATION

SOV/2659

Akademiya nauk SSSR. Institut mekhaniki

Inzhenernyy sbornik, t. 25 (Engineering Symposium, Vol. 25) Moscow, Izd-vo AN SSSR, 1959. 218 p. Errata slip inserted. 2,200 copies printed.

Ed.: A.A. Il'yushin; Ed. of Publishing House: D.M. Ioffe; Tech. Ed.: Ye. V. Makuni.

PURPOSE: This book is intended for applied mathematicians, physicists and engineers.

COVERAGE: The book is a collection of articles published by the Department of Engineering Sciences of the Institut mekhaniki (Institute of Mechanics) of the Academy of Sciences, USSR. The articles discuss various aspects of the mechanics of materials and of fluid mechanics, such as stress and bending of beams, shells, plates and reefs, supersonic gas-flows, vibrations, etc. The problems are treated in a highly theoretical, i.e., mathematical, manner. References are given at the end of each article.

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SOV/2659

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208

AVAILABLE: Library of Congress

Card 5/5

LK/SP  
12-29-59

GALIMOV, K.Z. (Kazan')

Large flexures of rectangular cylindrical panels. Inzh. sbor.  
25:20-36 '59. (MIRA 13:2)  
(Elastic plates and shells)

GALIMOV, E.M.

Some aspects of the theory of finite deformations of plates  
and shells. Izv. Akad. Nauk SSSR. Ser. fiz.-mat. i tekhn.  
nauk no. 14:13-22 '60. (NIRA 14:11)  
(Deformations(Mechanics))  
(Elastic plates and shells)

Oral Recd. R.E.  
BOROVSKIY, P. V.

PHASE I BOOK EXPLOITATION

SOV/6206 75

Konferentsiya po teorii plastin i obolochek. Kazan', 1960.

Trudy Konferentsii po teorii plastin i obolochek; 24-29 oktyabrya 1960. (Transactions of the Conference on the Theory of Plates and Shells Held in Kazan', 24 to 29 October 1960). Kazan', [Izd-vo Kazanskogo gosudarstvennogo universiteta] 1961. 426 p. 1000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Kazanskiy filial. Kazanskiy gosudarstvennyy universitet im. V. I. Ul'yanova-Lenina.

Editorial Board: Kh. M. Mushtari, Editor; F. S. Isanbayeva, Secretary; N. A. Alumyaev, V. V. Bolotin, A. S. Vol'mir, N. S. Ganiyev, A. L. Gol'denveyzer; N. A. Kil'chevskiy, M. S. Kornishin, A. I. Lur'ye, G. N. Savin, A. V. Sachenkov, I. V. Svirskiy, R. G. Surkin, and A. P. Filippov. Ed.: V. I. Aleksagin; Tech. Ed.: Yu. P. Semenov.

PURPOSE: The collection of articles is intended for scientists and engineers who are interested in the analysis of strength and stability of shells.

Card 1/14

Transactions of the Conference (Cont.)

SOV/6206

75

COVERAGE: The book is a collection of articles delivered at the Conference on Plates and Shells held in Kazan' from 24 to 29 October 1960. The articles deal with the mathematical theory of plates and shells and its application to the solution, in both linear and nonlinear formulations, of problems of bending, static and dynamic stability, and vibration of regular and sandwich plates and shells of various shapes under various loadings in the elastic and plastic regions. Analysis is made of the behavior of plates and shells in fluids, and the effect of croop of the material is considered. A number of papers discuss problems associated with the development of effective mathematical methods for solving problems in the theory of shells. Some of the reports propose algorithms for the solution of problems with the aid of electronic computers. A total of one hundred reports and notes were presented and discussed during the conference. The reports are arranged alphabetically (Russian) by the author's name.

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Card 5/14

MALINOV, K.Z. (Kazan'):

"Simplification of the energy functional in the non-linear theory  
of shallow shells."

report presented at the 2nd All-Union Congress on Theoretical and Applied  
Mechanics, Moscow, 29 Jan - 5 Feb 64.

L 01486-66 EWT(d)/EWT(m)/EWP(w)/EWP(v)/EWP(k)/EWA(h)/ETC(m) HW/EM

ACCESSION NR: AR5019374

UR/0124/65/000/007/V008/V008  
539.3

23  
B

SOURCE: Ref. zh. Mekhanika, Abs. 7V54

AUTHOR: Galimov, K. Z.

TITLE: On variational methods in the nonlinear theory of shallow shells

CITED SOURCE: Sb. Itog. Nauchn. konferentsiya Kazansk. un-ta za 1963 g. Sekts. matem., kibernet. i teoriya veroyatn., mekhan. Kazan, 1964, 130-131

TOPIC TAGS: shallow shell, nonlinear shell structure, Gaussian curvature, power functional shell theory, shell buckling

TRANSLATION: The report presents a simplification for the first variation of the power functional under certain boundary conditions. It is shown at the same time that the power functional remains unaffected by variations of the second invariants  $T_2$  and  $\nabla T_2$  of the tangential stress and flexural strain tensors in some combination with the first invariants of those tensors. This approach is taken in evolving a simplification of a mixed-type functional which leads to equilibrium equations and a compatibility law. These simplifications of the variational formula make it possible to demonstrate that surface deformation

Card 1/2

L 01486-66

ACCESSION NR: AR5019374

in the area of the bulge  $\zeta'$  (bounded by an unknown contour  $C'$ ) resolves itself to buckling. A segment of the buckled middle surface  $\zeta_*$  proves isometric in relation to the initial  $\zeta$ . The principal invariant of such buckling is represented by a Gaussian curvature. If  $K_0$  and  $K_*$  are curvatures prior to and after deformation, then the variational formula yields the relationship  $K=K_*-K=0$ , i.e. the Gaussian curvature persists. This is possible in an area of extensive flexure, where internal strains prove negligibly small in comparison to flexural strains. The same variational formula dictates that membrane forces revert to zero in the bulge area, but attain significant levels near the crests of ripples bounding the bulge. The surface segments  $\theta$  and  $\theta_*$  do not exhibit isometric conformity in that region, hence equilibrium and compatibility equations are totally in effect.

SUB CODE: AS

ENCL: 00

Card 2/2 DP

GALIMOV, K.Z.; SACHENKOV, A.V.

Reviews and bibliography. Prikl. mekh. 1 no.5:138-139 '65. (MIRA 18:7)

GALIMOV, L.

Improve the tie between science and production. Fin.SSSR.  
20 no.11:93-94 N '59. (MIR 12:12)  
(Moscow Province-- Finance)

(*Original document*)

137-1958-2-2620

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 2, p 59 (USSR)

AUTHORS: Babadzhan, A. A., Shreyber, K. Ya., Galimov, M. D.

TITLE: Using Mazut as a Reducing Agent in the "Pyroselection" Process  
(Ispol'zovaniye mazuta v kachestve vosstanovitelya v protsesse  
piroselekttsii)

PERIODICAL: Byul. tsvetn. metallurgii, 1957, Nr 13, pp 27-28

ABSTRACT: A pyrometallurgical selection method for the treatment of Cu-Zn and Cu-Pb sulfide concentrates and other complex multi-metal substances in concentrates has been worked out and introduced into industry.

G. S.

1. Copper alloys--Pyroselection    2. Mazut--Reducing agent--Applications

Card 1/1

6. 1. 1958 v. 13. 9

AUTHORS: Babadzhan, A.A., Aglitskiy, V.A., Shreyber, K.Ya., Galimov, M.D. 136-58-3-7/ 21  
and Shirinkin, N.A.

TITLE: System for feeding coal dust into a converter used for pyroselection  
(Sistema podachi ugol'noy pyli v konverter dlya protsessa piroselekttsii)

PERIODICALS Tsvetnyye Metally, 1958, Nr.3., pp. 38 - 46 (USSR)

ABSTRACT: The authors describe preliminary investigations at the Kirovgradskiy copper-smelting works before the adoption of its pyroselection method which involves the injection into the converter of coal dust at a fixed rate in relation to the air flow (pressure 0.7 - 1.0 atm. gauge). The initial system involved pressurization of the bunker, but later an atmospheric pressure design, as tested at the Krasnoural'sk copper-smelting works was adopted and incorporated in the full-scale installation commissioned in August 1955. The installation (fig.1.) consists of the following parts, each of which is described and discussed. The pneumatic screw pump has an adjustable speed of revolution and a pump (fig.2.), the latter being based on one made by the Pavshinskiy mechanical works; a KSE-6 compressor supplies compressed air. The air/dust mixture (5-10 kg coal dust per kg air) moves to the converter at 12-15 m/sec. A critical part of the installation is the air and gas distribution system near and in the converter: here a blind-pass collector (fig.4) proposed by N.A. Shirinkin, M.D. Galimov and A.A. Babadzhan, and designed with the

Card 1/2

System for feeding coal dust into a converter used for pyroselection. 136-58-3-7/21

participation of M.D. Galimov, Ye.A. Verkhoturova and B.P. Smorodyakov was found to give even feed to all the tuyeres. An ejector type of tuyere with individual air and air/coal feeds, proposed and designed by M.D. Galimov, A.A. Babadzhan, B.P. Smorodyakov, S.Ya. Musikhin and A.A. Verkholetov was chosen (fig.7). To avoid air losses during tuyere clearing a ring seal designed by S.M. Popov, Engineer, is used. The authors recommend the system described for other processes requiring the injection of coal dusts into a fused mass. There are 7 figures.

AVAILABLE: Library of Congress.

1. Coal dust-Applications
2. Fuels-Control systems

Card 2/2

GALIMOV, M.D.; BABADZHAN, A.A.; BERENOV, S.V.; TIMOSHIN, D.Ya.; SAVIK, A.Ya.

Converter dust screen with water cooling. Biul. TSIIN tsvet. met.  
no.4:31-32 '58. (MIRA 11:5)  
(Converters) (Dust collectors---Cooling)

GALIMOV, M.

Competition accelerates the pace. Mast.ugl. 9 no.12:8 D '60.  
(MIREA 13:12)

1. Rukovoditel' brigady kommunisticheskogo truda shakhty №.19-20  
tresta Gorlovskugol'.  
(Donets Basin--Coal mines and mining--Labor productivity)

GALIMOV, M.D.; OKUNEV, A.I.

Experimental study of germanium sulfide oxidation by the heating and weighing method. Izv. vys. ucheb. zav.; tsvet. met. 4 no.3:105-107 '61. (MIRA 15:1)

1. Ural'skiy nauchno-issledovatel'skiy i proektnyy institut mednicy promyshlennosti (Unipromed'). Rekomendovana kafedroy tyazhelykh tsvetnykh metallov Ural'skogo politekhnicheskogo instituta.

(Germanium--Metallurgy)  
(Sulfides--Metallurgy)

GALIMOV, M.D.; KIRR, L.D.; STEPIN, B.V.; ZAPONOVA, K.F.

Behavior of arsenic and rare elements during the oxidizing  
roasting and sulfatization of dusts and sublimates. TSvet.  
met. 34 no.12:61-67 D '61. (MIRA 14:12)  
(Copper industry--By-products)  
(Fly ash)

5 2200

29827  
S/020/61/140/006/028/030  
B103/B101

AUTHORS: Okunev, A. I., Galimov, M. D., and Vostryakov, A. A.

TITLE: Oxidation and volatilization processes of germanium sulfides

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 140, no. 6, 1961, 1384-1387

TEXT: The authors studied: A) oxidation of  $\text{GeS}_2$ , B) sublimation of Ge from  $\text{GeS}_2$  in neutral atmosphere, and C) oxidation of  $\text{GeS}$ . To A): The thermogravimetric method and an apparatus described previously (A. I. Okunev, L. A. Popovkina, Tsvetnyye metally, no. 5 (1959)) were used. Weighed portions of 100 mg were heated with a rate of 6-11 deg/min in case A) as well as C). The escaping  $\text{SO}_2$  was drawn off and titrated with starch iodine.

It has been found that oxidation of  $\text{GeS}_2$  in air begins at  $260-280^\circ\text{C}$  and may be subdivided into the temperature ranges I - V (Table 1). The reactions of ranges I - IV are total reactions of the processes:  $\text{GeS}_2 + 3\text{O}_2 = \text{GeO}_2 + 2\text{SO}_2$  (1) and  $\text{GeS}_2 + 4\text{O}_2 = \text{Ge}(\text{SO}_4)_2$  (2). Oxides and sulfates are formed simultaneously

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in all ranges up to 667°C, whereby basic sulfates  $\text{GeO}_2 \cdot \text{Ge}(\text{SO}_4)_2$  may be formed. Reaction (2) does not take place in range V, but  $\text{GeS}_2$  is rapidly further oxidized to the dioxide according to reaction (1). Moreover, the sulfate interacts with the initial sulfide, whereby  $\text{GeO}_2$  is formed:

$\text{GeS}_2 + 3\text{Ge}(\text{SO}_4)_2 = 4\text{GeO}_2 + 8\text{SO}_2$ . At the same time, the sulfate decomposes with formation of  $\text{GeO}_2$ . Above 670°C,  $\text{GeO}_2$  is the final product. Oxidation is not yet completed at 720°C (attains 80 %), since it is strongly inhibited by fusion of the weighed portion. Sulfate formation is most intensive in ranges I and III, whilst oxidation proceeds much slower in range IV, since a film of  $\text{GeO}_2$  and  $\text{Ge}(\text{SO}_4)_2$  forms on the surface. In this instance,  $\text{Ge}(\text{SO}_4)_2$  is not decomposed. Conclusions:  $\text{Ge}(\text{SO}_4)_2$  is rather stable and begins to decompose with increasing temperature in the presence of the sulfide only at 670°C. Under these circumstances, it has been found at 440, 455, 500, 525, 570, 625, 675, and 690°C that  $\text{GeS}_2$  is oxidized within the first 10-20 min, whereupon  $\text{SO}_2$  separation ceases. The highest content

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of  $\text{Ge}(\text{SO}_4)_2$  was reached in the oxidation products at  $525^\circ\text{C}$ . Above  $530^\circ\text{C}$ ,  $\text{Ge}(\text{SO}_4)_2$  begins to decompose, when further heated. At  $570^\circ\text{C}$ , the sulfate content increases gradually within the first 20 min and decreases, when this temperature is further conserved. This is due to both interaction with the residual sulfide and dissociation. At all temperatures, the sulfide content does not exceed 30 %. To B) The weight of  $\text{GeS}_2$  decreases significantly in oxygen-free  $\text{N}_2$  only above  $700^\circ\text{C}$  (by 11 %). This loss attains 45 % at  $800^\circ\text{C}$  to decrease abruptly at  $830$ - $850^\circ\text{C}$  owing to fusion. The product of  $\text{GeS}_2$  dissociation (at  $500$ - $600^\circ\text{C}$ ) is a dark grey powder of GeS-like appearance. The oxidation curve of this powder is similar to that of GeS.  $\text{GeS}_2$  sublimates at  $650^\circ\text{C}$  with constant rate during the entire test time. To C): A small quantity of  $\text{SO}_2$  is separated at  $440^\circ\text{C}$  with heating rates of 3.6, 6.0, and 8.4 deg/min. Then, S separation becomes irregular; it increases suddenly at  $560$  and  $625^\circ\text{C}$ . The main process is here  $\text{GeS} + 2\text{O}_2 = \text{GeO}_2 + \text{SO}_2$ , whereby  $\Delta P = 0$ . GeS is oxidized both

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in solid and after sublimation also in gaseous phase. Germanium sublimates should be oxidized under productional conditions in gaseous phase, as long as the sulfide particles are still in disperse phase. There are 4 figures, 1 table, and 12 references: 7 Soviet and 5 non-Soviet. The two references to English-language publications read as follows: R. B. Bernstein, D. Cubicetti, J. Am. Chem. Soc., 73, 4112 (1951); Eng. and Mining J., 157, No. 5, 77, 1956.

ASSOCIATION: Ural'skiy nauchno-issledovatel'skiy projektnyy institut mednoy promyshlennosti (Ural Scientific Research and Planning Institute of the Copper Industry)

PRESENTED: April 4, 1961, by S. I. Vol'fkovich, Academician

SUBMITTED: April 3, 1961

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"APPROVED FOR RELEASE: 07/16/2001

CIA-RDP86-00513R000614110010-7

GALIMOV, M.D.

Improving the cyanide process. TSvet. met. 36 no.11:82-83 N '63.  
(MIRA 17:1)

APPROVED FOR RELEASE: 07/16/2001

CIA-RDP86-00513R000614110010-7"

ACCESSION NR: AP4019807

5/0279/64/000/001/0050/0060

AUTHORS: Galimov, M. D. (Sverdlovsk); Gol'dahtayn, T. Iu. (Sverdlovsk)

TITLE: The problem of calcium germanates formation

SOURCE: AN SSSR. Izv. Metallurgiya i gornoye delo, no. 1, 1964, 58-60

TOPIC TAGS: calcium, calcium oxide, germanium, germanium oxide, calcium germanate, solid phase reaction, sintering reaction, oxidising atmosphere, air, reducing atmosphere, carbon monoxide-carbon dioxide, x-ray analysis, composition of phases, thermogram, thermal effect

ABSTRACT: The objective of the investigation was to ascertain the possibility of producing calcium germanates by interaction between solid calcium and germanium oxides at temperatures below 1100C. Preliminary thermographic investigations were conducted on Kurnakov's PFK-57 pyrometer, using 2.5-6.0 g CaO and GeO<sub>2</sub> in a 1:1 molar ratio. A number of thermal effects were observed. In the 150-450C range there occurred an endothermal effect caused by the loss of crystallization water by the germanium dioxide. Another thermal effect (at 450-630C) was caused by the decomposition of calcium hydroxide. The weakly pronounced effects at 760-800C and  
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ACCESSION NR: AP4019807

1025-10500 resulted from the  $\text{GeO}_2$  and  $\text{CaO}$  interaction (confirmed by x-ray analysis). Further investigations of  $\text{GeO}_2$  and  $\text{CaO}$  interaction were conducted in the air, in equimolar ratio, under isothermal conditions, at 420, 650, 800, and 1100°C, in periods of 5-35 hours. Analogous studies were conducted on a 1:2 molar ratio of the same ingredients at 1100°C. It was established that a 5-hour sintering at all temperatures produced new phases with a characteristic complex of lines independent of the ratio of the oxides. Sintering calcium germanates for 4-9 hours at 1100°C in an atmosphere of 15% carbon monoxide and 85% carbon dioxide destroyed all these phases, and formed a single new phase, as well as  $\text{CaC}$ . No lines of either free germanium or of its dioxide could be detected. It was established that the single new line observed represented calcium germanate. A. A. Vostryakov and V. P. Volkov participated in the work. Orig. art. has: 1 chart, 1 table, and 1 formula.

ASSOCIATION: none

SUBMITTED: 11May63

SUB CODE: CH

Card 2/2

DATE ACQ: 31March

NO RKF SOV: 001

INCL: 00

OTHER: 001

"APPROVED FOR RELEASE: 07/16/2001

CIA-RDP86-00513R000614110010-7

GALIMOV, M.N., voyennyy shturman pervogo klassa, polkovnik.

Bombing using an auxiliary aiming point. Vest.Vozd.Fl. 40 no.6:41-45  
Je '57. (MLRA 10:8)

(Bombing, Aerial)

APPROVED FOR RELEASE: 07/16/2001

CIA-RDP86-00513R000614110010-7"

GALIMOV, N.

Technology of servicing ships in the river port of Leningrad.  
Rech. transp. 23 no.12;45 D '64. (MIRA 18;6)

1. Starshiy inzh. tekhnologo-normativnoy gruppy Leningradskogo  
technogo porta.

SVIRSKIY, I. V.; GALIMOV, N. K.

Reducing the calculation of two-layer and multi-layer shells to  
one-layer shells. Izv. Kazan. fil. AN SSSR. Ser. fiz.-mat. i  
tekhn. nauk no. 14-71-74 '60. (MIRA 14:11)  
(Elastic plates and shells)

ACCESSION NR: AR4014422

s/0124/64/000/001/v007/v007

SOURCE: RZh. Mekhanika, Abs. 1v46

AUTHOR: Galimov, N. K.

TITLE: Theory of thin slanted shells with filler during a finite sag

CITED SOURCE: Sb. Nelineyn. teoriya plastin i obolochek. Kazan', Kazansk. un-t, 1962, 61-69

TOPIC TAGS: thin shell, shell filler, shell bending

TRANSLATION: The author presents equilibrium equations for a triple-layer slanted shell, symmetrically constructed in its thickness, with orthotropic carrying layers and an orthotropic filler. During the derivation of the equations for the carrying layer, the author utilized the Kirchhoff-Love hypothesis and assumed for the filler a quadratic law of displacement variation across the filler's thickness. The normal displacements of the filler's points are assumed to be linear functions of the transverse coordinate. The hypothesis about the constancy of the filler's transverse shifts across its thickness has been used. All this resulted in a system of six equilibrium equations describing the case when the shell is subjected to a

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ACCESSION NR: AR4014422

transverse load and an arbitrary heating; this system can be reduced to five determining equations. There are 13 references. P. O. Chulkov.

DATE ACQ: 18Feb64

SUB CODE: AP, MM

ENCL: 00

Card 2/2

L 10436-67 EWT(d)/EWT(m)/EWP(w)/EWP(y)/EWP(k) IJP(c) MN/EN  
ACC NR: AT6032964 SOURCE CODE: UR/3228/64/000/002/0035/0047

AUTHOR: Galimov, N. K.; Mushtari, Kh. M.

38

ORG: none

TITLE: Theory of three-layer plates and shells

SOURCE: Kazan. Universitet. Issledovaniya po teorii plastin i obolochek, no. 2, 1964, 35-47

TOPIC TAGS: metal stress, shell deformation, metal deformation

ABSTRACT: The authors derive equations for equilibrium and the conditions for joint deformations of the slanting shell of an asymmetric structure, considering the transversal deformation of the filler. The tangential and normal displacements of the middle surface of the filler, a shear function, and the transversal deformation of the filler are taken as variables. The filler displacements are approximated by a power expansion of the normal coordinate. The buckling is approximated by a linear function and the tangential displacements by a quadratic one. The filler shears are assumed to be constant along the thickness. The stresses are reduced to the middle filler surface; the deformations are assumed to be small, and the buckling finite. The problem of stability of a cylindrical shell with orthotropic filler with reduction, and with a rigid isotropic filler without reduction is solved. Orig. art. has: 42 equations.

SUB CODE: 11,2C/ SUBM DATE: --Jun63/ ORIG REF: 011  
Card

L 7043-65 EWT(d)/EWT(m)/EWA(d)/EWP(k)/EWP(r) Pr-4 ASD(1)/AFTG(1)  
ACCESSION NR: AP4053039 8/147/64/000/001/0047/0053

AUTHCR: Galinov, N. K.

TITLE: Stability of a cylindrical sandwich shell with light orthotropic core under uniform external pressure

SOURCE: IVIZ. Aviatsionnaya tekhnika, no. 1, 1961, 47-55

TOPIC TAGS: shell, cylindrical shell, sandwich shell, orthotropic core, shell stability, shell buckling

ABSTRACT: General stability of the shell under external hydrostatic pressure is analyzed and a formula is derived for critical load. The faces are considered to be different and isotropic, and the core lightweight and orthotropic (its transverse compressibility is disregarded). The effect of the variation of physical and geometric parameters of the shell (including the formation of waves) is discussed. All formulas and graphs are valid for  $G/E \leq 0.01$ , where  $G$  = the greatest shear modulus of the core and  $E$  = the smallest tension modulus of the faces. Orig. art. has: 19 formulas, 2 figures, and 1 table.

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I. 7043-65  
ACCESSION NR: AP4033039

ASSOCIATION: none

SUBMITTED: 10Jun65

ENCL: 00

SUB CODE: AS

NY REF Sov: 003

OTHER: 000

Card 2/2

L 32924-65 ENP(w) EM  
ACCESSION NR: AF5006991

S/0198/65/001/001/0377/0095

AUTHOR: Galimov, M. K. (Kazan)

TITLE: Axisymmetric bending and stability of triple-layered circular plates with light fillers

SOURCE: Prikladnaya mehanika, v. 1, no. 1, 1965, 77-85

TOPIC TAGS: plate vibration, sandwich structure, plate stability, plate deflection

ABSTRACT: The axisymmetric deflection of a triple-layered plate under transverse and longitudinal loads was investigated analytically. In part one, the case of transverse load deflection is considered. The governing equilibrium displacement equations are written in polar coordinates for uniform plate deflection  $w$ . The solution is discussed for three types of boundary conditions: plate fixed along its circumference, the two supporting layers hinged, and the freely supported plate. In part two, the bending is studied under the simultaneous action of a uniformly distributed load and a compressive force  $T$ , acting on the plate edges. The solution is given for a freely supported plate, the plate freely supported on the edges but with no displacement.

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ACCESSION NR: AP5016991

$$T_r + T_z = -T; u' - u'' + (a - s) \frac{du}{dr} = w = 0;$$

$$M_r + M_z + zT_r + sT_z = 0 \quad (r = R)$$

and for the boundary condition

$$T_r + T_z = -T; \quad u' - u'' + (a - s) \frac{du}{dr} = 0;$$

$$\frac{du}{dr} = 0; \quad w = 0 \quad (r = R)$$

Finally, in part three, the stability of the circular plate is studied under a compressive force. The solution is given graphically, and it is shown that the critical load depends on the boundary conditions used. Orig. art. has: 16 equations.

ASSOCIATION: Kazanskiy fiziko-tehnicheskiy institut (Kazan Physico-Technical Institute)

SUBMITTED: 21Apr64

ENCL: 00

SUB CODE: ME

NO REF Sov: 004

OTHER: 001

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